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1. An apparatus for enhancing the quality of an input audio signal made up of frequency components within a band of frequencies having a low end and a high end, said apparatus comprising:

5 a passive circuit which distorts the input signal, when transmitted therethrough, into an enhanced audio signal by amplifying frequency components of the input audio signal, the amplification of the frequency components in the input audio signal increases as the frequency components increase in frequency from a first intermediate frequency up to a peak high frequency, wherein the enhanced audio signal exhibits an improved harmonic quality compared to that of the input audio signal.

2. The apparatus as set forth in claim 1, wherein said peak high frequency is in the range of from about 6 KHz to about 30 KHz.

3. The apparatus as set forth in claim 1, wherein the amplification of the frequency component at the peak high frequency is from about 1.5 times to about 3.0 times the amplification of said intermediate frequency.

4. The apparatus as set forth in claim 1, wherein said passive circuit further distorts the input signal such that the amplification of the frequency components in the input audio signal increases as the frequency components decrease in frequency from a second intermediate frequency down to a peak low frequency, wherein the enhanced audio signal exhibits more of an improved  
5 harmonic quality compared to that of the input audio signal.

5. The apparatus as set forth in claim 4, wherein the peak low frequency is in the range of from about 20 Hz to about 1.0 KHz.

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6. The apparatus as set forth in claim 4, wherein the amplitude of the frequency component at the peak low frequency is from about 1.25 times to about 2.0 times the amplification of said second intermediate frequency.

7. The apparatus of claim 4, wherein said first and second intermediate frequencies are the same frequency.

8. The apparatus as set forth in claim 1, wherein said passive circuit comprises at least one transformer.

9. The apparatus as set forth in claim 8, wherein said at least one transformer comprises a single transformer, said single transformer effecting amplitude distortion of said input signal as defined by a first portion of a frequency response curve, said first portion increasing non-linearly from said intermediate frequency up to a peak high frequency.

10. The apparatus as set forth in claim 8, wherein said at least one transformer comprises first and second transformers, said first and second transformers effecting amplitude distortion of said input signal as defined by a first portion of a frequency response curve, said first portion increasing non-linearly from said first intermediate frequency up to a peak high frequency, and effecting further amplitude distortion of said input signal as defined by a second portion of said frequency response curve, said second portion increasing non-linearly from a second intermediate frequency down to a peak low frequency.

11. The apparatus as set forth in claim 10, wherein said first and second intermediate frequencies are the same frequency.

52 12. An audio system comprising:  
an audio source for generating an input audio signal made up of frequency components within a band of frequencies having a high end and a low end;  
an audio amplifier for generating a speaker drive signal; and  
5 a passive circuit for coupling said input audio signal to said audio amplifier, said passive circuit distorting said input audio signal, when transmitted therethrough, into an enhanced audio signal by amplifying frequency components of said input audio signal such that the frequency components in the input audio signal increase in amplitude as the frequency components increase in frequency from an intermediate frequency up to a peak high frequency, wherein the enhanced  
10 audio signal exhibits an improved harmonic quality compared to that of the input audio signal.

13. An audio system as set forth in claim 12, wherein no active element is coupled between said audio source and said audio amplifier.

14. The apparatus as set forth in claim 12, wherein said passive circuit further distorts the input signal such that the frequency components in the input audio signal increase in amplitude as the frequency components decrease in frequency from an intermediate frequency down to a peak low frequency, wherein the enhanced audio signal exhibits more of an improved harmonic  
5 quality compared to that of the input audio signal.

15. The apparatus as set forth in claim 12, wherein said passive circuit comprises at least one transformer.

16. The apparatus as set forth in claim 15, wherein said at least one transformer comprises a single transformer, said single transformer effecting amplitude distortion of said input signal as defined by a first portion of a frequency response curve, said first portion increasing non-linearly from an intermediate frequency to a peak high frequency.

17. The apparatus as set forth in claim 15, wherein said at least one transformer comprises first and second transformers, said first and second transformers effecting amplitude distortion of said input signal as defined by a first portion of a frequency response curve, said first portion increasing non-linearly from an intermediate frequency up to a peak high frequency, and effecting further amplitude distortion of said input signal as defined by a second portion of said frequency response curve, said second portion increasing non-linearly from said intermediate frequency down to a peak low frequency.

18. A method of enhancing the quality of electronic audio signals, comprising the steps of: providing an input audio signal made up of frequency components within a frequency band having a high end and a low end; and  
distorting the input audio signal into an enhanced audio signal by passing said input audio signal through a passive circuit to amplify frequency components of the input signal, the amplification of the frequency components in the input audio signal increases as the frequency components increase in frequency from an intermediate frequency up to a peak high peak frequency, wherein the enhanced audio signal exhibits an improved harmonic quality compared to that of the input audio signal.

19. The method as set forth in claim 18, wherein said step of distorting also includes further distorting the input signal such that the amplification of the frequency components in the input audio signal increases as the frequency components decrease in frequency from an intermediate frequency down to a peak low frequency, wherein the enhanced audio signal exhibits more of an improved harmonic quality compared to that of the input audio signal.

20. The method as recited in claim 18, further comprising the step of transmitting the enhanced audio signal from one location to another.

**Abstract**

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